

REPORT FOR 4TH QUARTER 2003

U.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUSFORM **MQ333W**

CURRENT INDUSTRIAL REPORTS

METALWORKING MACHINERY
{SHIPMENTS AND UNFILLED ORDERS}If you have questions regarding this
report form please contact:LARRY BLUMBERG EXT4
1(800)201-4647

EMPLOYER IDENTIFICATION (EI)

NUMBER. Identification number
used on Employer's Quarterly
Federal Tax Return (U.S. Treasury
Department Form 941) (Enter if
not shown, correct if wrong.)CONTACT PERSON (Enter information
if not shown, correct if wrong.)

Name ATTN: CONTROLLER

Area code Number -

Fax number

The 8-digit number that appears above indicates that the Office of Management and Budget has approved this survey. If that number is not displayed, do not complete this form. YOUR RESPONSE IS REQUIRED BY LAW (Title 13, United States Code). By section 9 of the same law, YOUR REPORT IS CONFIDENTIAL. It may be seen only by persons sworn to uphold the confidentiality of Census Bureau information and may be used only for statistical purposes. The law also provides that copies retained in your files are immune from legal process.

In correspondence pertaining to this establishment's report,
please refer to the 11 digit Identification Number (ID)

(Please correct any error in name and address including ZIP Code)

PART I FOR EACH ITEM LISTED BELOW, ENTER FIGURES OR "0" for current period. (The figures shown in the shaded areas were reported for the previous two periods.) PLEASE REFER TO THE INSTRUCTIONS BEFORE COMPLETING THIS REPORT FORM.

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT					
			Shipments		Unfilled orders End of Quarter	Shipments of numerically con- trolled machines only		Shipments Export only
			No. of units	Value {\$1,000}	Value {\$1,000}	No. of units	Value {\$1,000}	Value {\$1,000}
* PLEASE REFER TO INSTRU- * TION MANUAL FOR COMPLETE * ITEM DESCRIPTIONS		1						
		2						
		3						
333512A101-All boring machines valued under \$3,025 each excl. machining centers	1110	4 QTR						
		3 QTR						
		2 QTR						
333512A103-Horiz. boring, drilling & milling mach., \$3,025 ea. or more: incl. floor, table & rail mounted	1125	4 QTR						
		3 QTR						
		2 QTR						
333512A105-Precision boring mach. incl. horiz. & vert. boring machines \$3,025 ea. or more	1140	4 QTR						
		3 QTR						
		2 QTR						

* Figures not received when form was prepared. PLEASE ENTER, if not previously submitted.

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC			AND EXPORT			Shipments Export only
			Shipments		Unfilled orders End of Quarter Value (\$1,000)	Shipments of numerically con- trolled machines only			
			No. of units 1	Value (\$1,000) 2		No. of units 4	Value (\$1,000) 5		
333512A111-All drilling machines valued under \$3,025 each, excl. machining centers	1205	4 QTR							
		3 QTR							
		2 QTR							
333512A113-Vert. upright drilling mach., incl. plain- upright & heavy duty, \$3,025 ea. or more	1215	4 QTR							
		3 QTR							
		2 QTR							
333512A117-Deep hole drilling machines, \$3,025 each or more	1235	4 QTR							
		3 QTR							
		2 QTR							
333512A119-Multiple spindle- drilling mach., adjustable joint & fixed center types, \$3,025 ea. or more	1245	4 QTR							
		3 QTR							
		2 QTR							
333512A121-All other automatic multiple spindle drilling machines, \$3,025 ea. or more	1255	4 QTR							
		3 QTR							
		2 QTR							
333512A123-All other drilling mach. n.e.c. incl. sensitive, vert. radial, \$3,025 ea. or more	1265	4 QTR							
		3 QTR							
		2 QTR							
X X X -Total boring and drilling machines {sum of codes 1110-1265}	1295	4 QTR							
		3 QTR							
		2 QTR							
3335121100-Gear cutting machines {see manual for inclusions}	1991	4 QTR							
		3 QTR							
		2 QTR							
3335122101-Grinding, polish- ing, buffing, honing, & lap- ing machines, ex. gear-tooth type, under \$3,025 each	2010	4 QTR							
		3 QTR							
		2 QTR							
3335122108-External cylindri- cal grinding mach.: plain & universal, including angular wheel types-\$3,025 or more	2021	4 QTR							
		3 QTR							
		2 QTR							

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT			Shipments of		
			Shipments		Unfilled orders End of Quarter Value	numerically con- trolled machines		Shipments Export only
			No. of units	Value (\$1,000)	(\$1,000)	No. of units	Value (\$1,000)	Value (\$1,000)
3335122116-All other external grinders, \$3,025 ea or more {incl. roll, chucking, & centerless types}	2075	4 QTR						
		3 QTR						
		2 QTR						
3335122120-Internal cylindrical grinding machines	2100	4 QTR						
		3 QTR						
		2 QTR						
3335122122-Surface grinding machines	2146	4 QTR						
		3 QTR						
		2 QTR						
3335122136-All other disc grinders, bench, floor, snag, double spindle, abrasive belt grinders, \$3,025 ea or more	2225	4 QTR						
		3 QTR						
		2 QTR						
3335122142-Tool, cutter, and drill point grinding machines {incl. universal & special} \$3,025 ea or more	2328	4 QTR						
		3 QTR						
		2 QTR						
3335122151-All other grinding mach. n.e.c. {see manual for inclusions}, \$3,025 ea or more	2430	4 QTR						
		3 QTR						
		2 QTR						
3335122156-Honing & lapping mach. exc. gear type-inter- nal incl. comb. bore-hone & external, \$3,025 each or more	2530	4 QTR						
		3 QTR						
		2 QTR						
3335122161-Flat surface lapping machines, excl. gear lapping, valued at \$3,025 ea. or more	2579	4 QTR						
		3 QTR						
		2 QTR						
3335122166-Polishing & buff- ing machines {see manual} \$3,025 each or more	2740	4 QTR						
		3 QTR						
		2 QTR						
X X X -Total grind., pol- ishing, buffing, honing & lapping mach. exc. gear-tooth type {sum of codes 2010-2740}	2790	4 QTR						
		3 QTR						
		2 QTR						

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT					
			Shipments		Unfilled orders End of Quarter Value	Shipments of numerically con- trolled machines only		Shipments Export only
			No. of units	Value (\$1,000)	Value (\$1,000)	No. of units	Value (\$1,000)	Value (\$1,000)
3335123131-All lathes {turning machines} valued under \$3,025 each	2801	4 QTR						
		3 QTR						
		2 QTR						
3335123101-All horiz. multi. spindle NC turning mach. ex. those w/opposing powered subspindles {\$3,025 or more}	2802	4 QTR						
		3 QTR						
		2 QTR						
3335123107-NC turning mach ines, horizontal spindle, chuck size less than 10" {\$3,025 ea. or more}	2807	4 QTR						
		3 QTR						
		2 QTR						
3335123116-NC turning machines, horiz. spindle, chuck size 10" to less than 15" {\$3,025 ea. or more}	2809	4 QTR						
		3 QTR						
		2 QTR						
3335123121-NC turning machines, horiz. spindle, chuck size 15" and over {\$3,025 ea. or more}	2811	4 QTR						
		3 QTR						
		2 QTR						
X X X -Total lathes, horiz. numerically controlled turning machines {sum of codes 2802-2811}	2815	4 QTR						
		3 QTR						
		2 QTR						
3335123126-NC vertical spindle lathes, boring & turning machines, \$3,025 ea. or more	2920	4 QTR						
		3 QTR						
		2 QTR						
3335123134-Non-numerically controlled turning machines valued at \$3,025 each or more	3102	4 QTR				XXXXX	XXXXX	
		3 QTR				XXXXX	XXXXX	
		2 QTR				XXXXX	XXXXX	
3335124101-All milling machines valued under \$3,025 each, excluding machining centers	3309	4 QTR						
		3 QTR						
		2 QTR						
3335124106-General purpose type knee milling machines, excl machining centers, \$3,025 each or more	3405	4 QTR						
		3 QTR						
		2 QTR						

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT			Unfilled orders End of Quarter			Shipments of numerically controlled machines only			Shipments Export only		
			Shipments		Value	Value	Value	Value	Value	Value	Value	Value	Value	Value
			No. of units											
			1		2	3			4	5		6		
3335124111-Automatic single spindle, multi spindle & spec. purp. mach., excl. mach. ctrs, \$3,025 ea or more	3470	4 QTR												
		3 QTR												
		2 QTR												
3335124121-All other milling mach n.e.c.{incl. planer & thread type}, excl. machining ctrs, \$3,025 ea or more	3675	4 QTR												
		3 QTR												
		2 QTR												
X X X -Total milling machines excl. machine centers {sum of codes 3309-3675}	3691	4 QTR												
		3 QTR												
		2 QTR												
3335127101-Machining centers; drill, mill, bore-VERTICAL, Y axis travel less than 20 inches	3721	4 QTR												
		3 QTR												
		2 QTR												
3335127106-Machining centers; drill, mill, bore-VERTICAL, Y axis travel 20 - 26 inches	3722	4 QTR												
		3 QTR												
		2 QTR												
3335127111-Machining centers; drill, mill, bore-VERTICAL, Y axis travel over 26 inches	3723	4 QTR												
		3 QTR												
		2 QTR												
3335127112-Machining centers; drill, mill, bore - HORIZ. Under 500mm pallet and smaller	3724	4 QTR												
		3 QTR												
		2 QTR												
3335127113-Machining centers; drill, mill, bore - HORIZ. 500mm - 800mm pallet	3725	4 QTR												
		3 QTR												
		2 QTR												
3335127114-Machining centers; drill, mill, bore - HORIZ. Over 1,000mm pallet	3726	4 QTR												
		3 QTR												
		2 QTR												
3335127146-All other machining centers {see manual for inclusions}	3736	4 QTR												
		3 QTR												
		2 QTR												

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT			Shipments of			Shipments Export only
			Shipments		Unfilled orders End of Quarter Value (\$1,000)	numerically con- trolled machines only		Value (\$1,000)	
			No. of units 1	Value (\$1,000) 2		No. of units 4	Value (\$1,000) 5		
X X X -Total machining centers {sum of codes 3721- 3736}	3737	4 QTR							
		3 QTR							
		2 QTR							
3335128101-Station type machines dial or rotary, trunnion & center column	3821	4 QTR							
		3 QTR							
		2 QTR							
3335128106-Station type machines transfer {free, palletized, shuttle}	3823	4 QTR							
		3 QTR							
		2 QTR							
3335128111-Other station type metal cutting machine tools n.e.c.	3825	4 QTR							
		3 QTR							
		2 QTR							
X X X -Total station type machines {sum of codes 3821-3825}	3831	4 QTR							
		3 QTR							
		2 QTR							
3335129101-Other metal cutting machine tools, n.e.c.,valued under \$3,025	3840	4 QTR							
		3 QTR							
		2 QTR							
3335129106-Broaching mach- ines, incl.internal & surface, \$3,025 each or more	3850	4 QTR							
		3 QTR							
		2 QTR							
3335129122-Sawing & cut-off machines: vertical band saws valued at \$3,025 each or more	4181	4 QTR							
		3 QTR							
		2 QTR							
3335129123-Sawing & cut-off machines: horizontal band saws valued at \$3,025 each or more	4183	4 QTR							
		3 QTR							
		2 QTR							
3335129126-All other sawing & cut-off machines {include contour sawing & filing}, \$3,025 ea or more	4196	4 QTR							
		3 QTR							
		2 QTR							

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC		AND EXPORT		Shipments Export only Value (\$1,000)
			Shipments		Unfilled orders End of Quarter Value (\$1,000)	Shipments of numerically con- trolled machines only Value (\$1,000)	
			No. of units 1	Value (\$1,000) 2			
3335129131-Spark erosion, ultrasonic & electrolytic mach., \$3,025 ea or more	4619	4 QTR					
		3 QTR					
		2 QTR					
3335129136-Misc. metal cutting machine tools {see manual for inclusions}, \$3,025 ea or more	4630	4 QTR					
		3 QTR					
		2 QTR					
X X X -Total other metal cutting machine tools {sum of codes 3840-4630}	4691	4 QTR					
		3 QTR					
		2 QTR					
3335126111-Remanufactured metal cutting machine tools	4700	4 QTR					
		3 QTR					
		2 QTR					
3335131101-All punching and shearing machines valued under \$3,025 each	5009	4 QTR					
		3 QTR					
		2 QTR					
3335131106-Punches, incl. comb. punching & shearing mach., power operated, \$3,025 ea or more	5019	4 QTR					
		3 QTR					
		2 QTR					
3335131111-Punching mach. fixed position & 2-axes positioning table, power operated, \$3,025 ea or more	5025	4 QTR					
		3 QTR					
		2 QTR					
3335131116-Mechan. plate shearing machines {squaring, slitting etc}, power operated, \$3,025 ea or more	5031	4 QTR					
		3 QTR					
		2 QTR					
3335131121-Hydraulic plate shearing mach.{squaring, slitting etc}, power operated, \$3,025 ea or more	5032	4 QTR					
		3 QTR					
		2 QTR					
3335131126-Other power operated punching and shearing machines, \$3,025 ea or more	5085	4 QTR					
		3 QTR					
		2 QTR					

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT		Unfilled orders End of Quarter Value (\$1,000)	Shipments of numerically con- trolled machines only		Shipments Export only Value (\$1,000)
			No. of units 1	Value (\$1,000) 2		No. of units 4	Value (\$1,000) 5	
3335131131-All bending and forming machines valued under \$3,025 each	5109	4 QTR						
		3 QTR						
		2 QTR						
3335131136-Bending and forming machines, press brakes, \$3,025 ea or more	5112	4 QTR						
		3 QTR						
		2 QTR						
3335131142-Roll bending mach. incl. sheet, plate, angles, bars, shapes, & tubes valued at \$3,025 each or more	5117	4 QTR						
		3 QTR						
		2 QTR						
3335131151-Rotary bending & forming machines, including rotary head, valued at \$3,025 ea or more	5220	4 QTR						
		3 QTR						
		2 QTR						
3335131161-Other bending & forming machines including folders valued at \$3,025 ea or more	5270	4 QTR						
		3 QTR						
		2 QTR						
X X X -Total punching, shearing, bending & forming mach. {sum of 5009-5270}	5291	4 QTR						
		3 QTR						
		2 QTR						
3335133101-All presses valued under \$3,025 each	5409	4 QTR						
		3 QTR						
		2 QTR						
3335133106-Mechan. presses- open back inclinable {Gap or C-type}, 50 tons & under valued at \$3,025 ea or more	5420	4 QTR						
		3 QTR						
		2 QTR						
3335133113-Mechan. presses- open back inclinable {Gap or C-type}, Over 50 tons valued at \$3,025 ea or more	5432	4 QTR						
		3 QTR						
		2 QTR						
3335133121-Mech. presses, vert. straight sided & arch frame single action, single point valued at \$3,025 ea or more	5460	4 QTR						
		3 QTR						
		2 QTR						

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT					
			Shipments		Unfilled orders End of Quarter Value	Shipments of numerically con- trolled machines -----only-----		Shipments Export only
			No. of units 1	Value (\$1,000) 2	(\$1,000) 3	No. of units 4	Value (\$1,000) 5	Value (\$1,000) 6
3335133128-Mech. presses, vert. straight sided & arch frame two pt. 150 tons & under, \$3,025 ea or more	5535	4 QTR						
		3 QTR						
		2 QTR						
3335133133-Mech. presses, vert. straight sided & arch frame two pt. 150 tons & over, \$3,025 ea or more	5565	4 QTR						
		3 QTR						
		2 QTR						
3335133136-Mech. automatic presses, strip or coil field, valued at \$3,025 ea or more	5830	4 QTR						
		3 QTR						
		2 QTR						
3335133141-Other mechanical presses valued at \$3,025 each or more - see manual	5861	4 QTR						
		3 QTR						
		2 QTR						
3335133146-Hydraul. presses, vert. single action, all tonnages, housing/straight side type, \$3,025 ea or more	5961	4 QTR						
		3 QTR						
		2 QTR						
3335133151-Hydraul. presses, vert. sgl act. all tonnages, column type {open rod}, val at \$3,025 ea or more	5962	4 QTR						
		3 QTR						
		2 QTR						
3335133156-Hydraulic presses, gap or C-frame, 15 tons & under, val. at \$3,025 ea or more	6131	4 QTR						
		3 QTR						
		2 QTR						
3335133161-Hydraul. presses, gap or C-frame, 16-35 tons, valued at \$3,025 ea or more	6132	4 QTR						
		3 QTR						
		2 QTR						
3335133166-Hydraul. presses, gap or C-frame, over 35 tons, valued at \$3,025 ea or more	6133	4 QTR						
		3 QTR						
		2 QTR						
3335133171-Other hydraulic & presses {metalworking}, including horizontal, valued at \$3,025 ea or more	6305	4 QTR						
		3 QTR						
		2 QTR						

CURRENT INDUSTRIAL REPORTS - Continued

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PART I - Continued

Item (Product code - Description)	Item code	Report period	TOTAL MACHINES, DOMESTIC AND EXPORT					
			Shipments		Unfilled orders End of Quarter Value	Shipments of numerically con- trolled machines -----only-----		Shipments Export only
			No. of units 1	Value (\$1,000) 2	(\$1,000) 3	No. of units 4	Value (\$1,000) 5	Value (\$1,000) 6
X X X -Total presses, except forging {sum of codes 5409- 6305}	6321	4 QTR						
		3 QTR						
		2 QTR						
3335135176-Forging machines, including forging presses & die stamping presses	6405	4 QTR						
		3 QTR						
		2 QTR						
3335135101-All other metal forming type machine tools valued under \$3,025 each	6540	4 QTR						
		3 QTR						
		2 QTR						
3335135106-Thread rolling machinery valued at \$3,025 each or more	6610	4 QTR						
		3 QTR						
		2 QTR						
3335135111-Metal container- making machinery valued at \$3,025 ea or more	6615	4 QTR						
		3 QTR						
		2 QTR						
3335135116-Die casting machines valued at \$3,025 ea or more	6620	4 QTR						
		3 QTR						
		2 QTR						
3335135121-Riveting machines, except hand held portable types, \$3,025 ea or more	6779	4 QTR						
		3 QTR						
		2 QTR						
3335135126-All other metal forming type machine tools n.e.c. val. at \$3,025 ea or more	7173	4 QTR						
		3 QTR						
		2 QTR						
X X X -Total all other metal forming type machine tools {sum of codes 6540-7173}	7191	4 QTR						
		3 QTR						
		2 QTR						
3335137121-Remanufactured metal forming machine tools	7200	4 QTR						
		3 QTR						
		2 QTR						

PART I - Continued								
Item (Product code – Description)	Item code	Report period						
			1	2	3	4	5	6

PART II Has there been any change in the ownership or operation of this establishment during this period?
☐ Yes - Indicate type of change below. ☐ No - Skip to Part III.

☐ Yes - Indicate type of change below. ☐ No - Skip to Part III.

A. <input type="checkbox"/> Purchased from			
B. <input type="checkbox"/> Sold to			
C. <input type="checkbox"/> Plant discontinued all operations	Date		
D. <input type="checkbox"/> Plant operations no longer covered by this survey – <i>Describe in "Remarks" the products currently produced.</i>			
E. <input type="checkbox"/> Reorganized – <i>Describe in "Remarks;" e.g., partnership change or change in corporate status.</i>			

☐ Yes ☐ No – Indicate reasons for difference in "Remarks."

Signature of authorized official	Title	Date
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NOTE: Please make a photocopy of this for your records.

DEFINITIONS AND SPECIAL INSTRUCTIONS

1. Scope of survey

This survey covers all United States companies engaged in the manufacture of new and remanufactured industrial type metal cutting and metal forming types of metalworking machinery, including numerical control type (Sections I and II). Rebuilt machines are not collected on this survey.

2. Figures to be reported

Companies with more than one establishment manufacturing the products covered by this survey are requested to complete a separate report form for each location. If you have not received a separate form for each of your establishments, call the contact shown on the report form or write to the U.S. Census Bureau for additional forms.

QUANTITY AND VALUE OF SHIPMENTS

The figures on quantity and value of shipment should include the physical shipments of all products sold, transferred to other establishments within your company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and returns. Assign shipments to your own branches the same value as comparable sales to unaffiliated customers, i.e., the value includes an appropriate allocation of company overhead and profit. Do not include in shipments products bought and resold without further manufacture.

VALUE OF EXPORT SHIPMENTS

For purposes of this report, domestic includes shipments to destinations within the 50 states, the District of Columbia, Puerto Rico, and the Virgin Islands, as well as to the U.S. armed forces abroad for their own use. All other shipments are exports. Report the value of export shipments by type of machine.

VALUE OF UNFILLED ORDERS

Report the dollar value of orders received (for domestic and export) which have not passed through your sales accounts at the end of each quarter. Unfilled orders at the end of the quarter are equal to unfilled orders at the beginning of the quarter, plus net new orders received during the quarter, minus net sales.

BY VALUE OF MACHINE

Separate machines which are valued at less than \$3,025 each from machines valued at \$3,025 or more.

EXAMPLE:

Report all drilling machines valued at less than \$3,025 each with item code 1205, "All drilling machines valued under \$3,025 each."

Report drilling machines valued at \$3,025 or more each by the specific type of machine designated under item codes 1215 through 1265.

See Reference List, page 3. Do not combine machines valued at less than \$3,025 with machines valued at \$3,025 or more.

SHIPMENTS OF MACHINES EQUIPPED WITH NUMERICAL CONTROLS (NC)

In addition to including the shipments of metalworking machines equipped with numerical controls with total machines shipped, also report data on numerical control type machines separately by type of control in columns 4 and 5 immediately following the total for each type of machine. The value of machine tools equipped with numerical controls should include the value of the controls.

LEASED MACHINES

For products leased or rented by your company, report the number and estimated values. The estimate should approximate the value of the products sold outright. If no such prices exist, base the value on the assessment placed on these items for tax, insurance, or similar purposes.

SUBCONTRACT WORK

Include in the report complete products manufactured for you by others on a subcontract basis. Exclude complete machines produced by you for others on a subcontract basis, unless manufactured for an affiliated company.

IMPORTED OR ASSEMBLED COMPONENTS

Do not report on this survey if:

- a.** The products you shipped were imported complete or essentially complete.
- b.** The products you shipped were imported as subassemblies purchased and not machined further or large parts which required minimal assembly with hand tools and no metalworking.

Report on this survey if:

- a.** Parts for your products were imported and the assembly and fabrication consisted of metalworking or further machining.
- b.** Your establishment possesses the complete product design and performs in-house machining.

3. Definitions

MACHINE TYPES

Metal cutting type machine tools — These are defined as new, power-driven, complete machine tools, not supported in the hands of an operator when in use. They are used for removing metal in the form of chips. Also included are honing machines, lapping machines, grinders, and machines which cut using electrical and laser techniques.

Exclude small, low-priced, machine tools of light construction such as lathes; drilling, grinding, and milling machines and polishing and buffing machines designed primarily for home workshops, etc. Also exclude all woodworking or primarily woodworking type machines.

Metal forming type machine tools — These are defined as new, power-driven, complete machine tools, not supported in the hands of an operator when in use. They are used to press, forge, emboss, hammer, extrude, blank, spin, shear, die cast, or bend metal.

"ALL OTHER" CLASSIFICATIONS

The last item of most major product categories is an "all other" or "miscellaneous" group. Whenever possible, classify your products under the more specific heading which most nearly describes them. Classify them as "all other" only when a more specific description does not apply. Describe the products that you classify as "all other" in sufficient detail to permit identification. This may be done on a separate sheet of paper.

TYPES OF NUMERICALLY CONTROLLED MACHINES

Positioning — These are defined as machines equipped with "positioning" numerical control systems activated by direct data input (DNC), punched tape, punched cards, magnetic tape, cassette, or manual data input (MDI).

Report in this group all machines that have been equipped with control systems in which point-to-point positioning and cutting or forming (regardless of the number of movement

"axes" or auxiliary functions) are controlled automatically by means of numerical programs inserted into the systems.

Classify as "continuous path," machines equipped with a control system that permits "positioning" and "continuous path" operations.

Continuous path or computer numerical control — These are defined as machines equipped with "continuous path" numerical program control systems activated by direct data input (CNC), e.g., punched tape, punched cards, magnetic tape, cassette, or manual data input (MDI).

Report in this group all machines equipped with control systems in which, in addition to point-to-point positioning, the path of cutting is also automatically controlled by means of numerical programs inserted into the systems.

Classify as "continuous path," machines equipped with a control system that permits "positioning" and "continuous path" operations.

Digital readout systems including dial or plugboard — These are defined as machines equipped with digital readout systems or dial or plugboard type of prerecorded motion programs control systems.

Report in this group all machines equipped with control systems in which "positioning" or "continuous path" are automatically commanded by numerical programs fed into the system by an operator through dials, plugs, switches, or any other numerical method.

REMANUFACTURED MACHINE TOOLS

The basic machine carcass is reused with most of the iron retained. All possible modern improvements are incorporated. Ball screws and servo drives replace gear boxes and lead screws. Headstocks are driven by ac vector drive motors, and gears and range changes are reduced or eliminated. Position feedback may be added, as may CNC or PC controls. All of the electrics are replaced. The end product is superior to the original product when it left the factory as new.

4. Comparability

Data reported in this survey should correspond to the data reported in the Economic Census - Manufacturing Sector form. The sum of values for item codes shown in column (a) should correspond to the dollar values reported under product codes indicated in column (b) below:

Current Industrial Reports (Form MQ333W)	Economic Census - Manufacturing Sector
Item code (a)	Product code (b)
1110 through 1265	333512A pt
1991	3335121 pt
2010 through 2740	3335122 100
2801 through 2811	3335123 100
2920 through 3102	
3309 through 3675	3335124 100
3721 through 3736	3335127 100
3821 through 3825	3335128 100
3840 through 4630	3335129 100
5009 through 5270	3335131 100
5409 through 6305	3335133 100
6405 through 7173	3335135 100
4700	3335126 100
7200	3335137 100

REFERENCE LIST

FORM MQ333W		METALWORKING MACHINERY
Product code	Item code	Item description
		Section I – METAL CUTTING TYPE MACHINE TOOLS
		BORING MACHINES, excluding machining centers; and DRILLING MACHINES, excluding machining centers
333512A101	1110	All boring machines valued under \$3,025 each
		Machines valued at \$3,025 each or more, including laser type
333512A103	1125	Horizontal boring, drilling, and milling machines; includes floor, table and rail mounted, and all other boring machines (except boring lathes)
333512A105	1140	Precision and jig boring machines, including horizontal and vertical boring machines
333512A111	1205	All drilling machines valued under \$3,025 each
		Machines valued at \$3,025 each or more, including laser type
333512A113	1215	Vertical – (upright) drilling machines, including plain-upright and heavy duty
333512A117	1235	Deep hole drilling machines
		Multiple spindle drilling machines (cluster of spindles driven from one central power unit):
333512A119	1245	Adjustable joint and fixed center types
333512A121	1255	All other automatic multiple spindle drilling machines, including indexing turret head (fixed column and table)
333512A123	1265	All other drilling machines, n.e.c., including sensitive, vertical n.e.c., and radial
XXX	1295	Total boring and drilling machines (<i>Sum of item codes 1110–1265</i>)
		GEAR CUTTING MACHINES, including laser type
3335121100	1991	Gear cutting machines includes: gear hobbors, shapers, teeth finishing, bevel gear generators, and all other gear cutting machines

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section I — METAL CUTTING TYPE MACHINE TOOLS — Continued
		GRINDING, POLISHING, BUFFING, HONING, AND LAPPING MACHINERY (except gear-tooth grinding, lapping, polishing, honing, and buffing machines)
3335122101	2010	All grinding, polishing, buffing, honing, and lapping machines valued under \$3,025 each
		Machines valued at \$3,025 each or more
		External cylindrical grinding machines
3335122108	2021	Plain and universal, including angular wheel types
3335122116	2075	Roll, chucking, centerless, and other external cylindrical grinding machines
3335122120	2100	Internal cylindrical grinding machines
3335122122	2146	Surface grinding machines
3335122136	2225	All other disc grinders, bench, floor, snag, double spindle grinders, and abrasive belt grinders
3335122142	2328	Tool, cutter, and drill point grinding machines (including universal and special)
3335122151	2430	All other grinding machines, n.e.c., including planer type, thread grinding and deburring machines
		Honing and lapping machines except gear-tooth honing and lapping
3335122156	2530	Internal, including combination bore-hone and external (except flat surface lapping machines)
3335122161	2579	Flat surface lapping machines, except gear lapping
3335122166	2740	Polishing and buffing machines including speed lathes and multi-station type
XXX	2790	Total grinding, polishing, buffing, honing, and lapping machines, (except gear-tooth, grinding, lapping, polishing, and buffing machines) (Sum of item codes 2010–2740)

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section I — METAL CUTTING TYPE MACHINE TOOLS — Continued
		LATHES (TURNING MACHINES)
3335123131	2801	All lathes valued under \$3,025 each Machines valued at \$3,025 each or more
		NUMERICALLY CONTROLLED TURNING MACHINES
		Horizontal spindle:
3335123101	2802	All multiple spindle NC turning machines (except those with opposing powered subspindles (classified as single spindle)):
		Single spindle:
		PLEASE NOTE: <i>Each machine may not conform to all the criteria of any one subgroup. The criteria are ranked in order of importance to help indicate the proper subgroup classification. Determine horsepower by name plate listing.</i>
3335123107	2807	Chuck size: Less than 10 inches Horsepower: 25 and under Swing: 18 inches and under Spindle nose: A-8 inches and under
3335123116	2809	Chuck size: 10 inches to less than 15 inches Horsepower: 25 to 50 Swing: 18 inches to 25 inches Spindle nose: A-8 inches to 11 inches
3335123121	2811	Chuck size: 15 inches and over Horsepower: 50 and over Swing: 25 inches and over Spindle nose: 15 inches and over
XXX	2815	Total horizontal NC turning machines (Sum of item codes 2802–2811)
		Vertical spindle:
3335123126	2920	Vertical spindle lathes, boring and turning machines
3335123134	3102	NONNUMERICALLY CONTROLLED TURNING MACHINES VALUED AT \$3,025 EACH OR MORE

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section I — METAL CUTTING TYPE MACHINE TOOLS — Continued
		MILLING MACHINES, excluding machining centers
3335124101	3309	All milling machines valued under \$3,025 each
		Machines valued at \$3,025 each or more:
3335124106	3405	General-purpose type knee milling machines
3335124111	3470	Automatic single spindle, multiple spindle and special-purpose machines
3335124121	3675	All other milling machines, n.e.c., including planer type and thread milling machines
XXX	3691	Total milling machines (<i>Sum of item codes 3309–3675</i>)
		OTHER METAL CUTTING MACHINE TOOLS
		Machining centers (multi-function NC machines):
3335127101	3721	Drill, mill, bore — VERTICAL (automatic tool change): "Y" axis travel less than 20 inches
3335127106	3722	"Y" axis travel 20 inches through 26 inches
3335127111	3723	"Y" axis travel over 26 inches
3335127112	3724	Drill, mill, bore — HORIZONTAL (automatic tool change): Under 500mm pallet
3335127113	3725	500mm-800mm pallet
3335127114	3726	Over 800mm pallet
3335127146	3736	All other machining centers, including special machining centers, special adapting of standard machining centers, and machining centers with indexing turret
XXX	3737	Total machining centers (<i>Sum of item codes 3721–3736</i>)
		Machining centers (multi-function NC machines)
		Station type machines:
3335128101	3821	Dial or rotary, trunnion and center column
3335128106	3823	Transfer (free, palletized, shuttle)
3335128111	3825	Other station type, n.e.c.
XXX	3831	Total station type machines (<i>Sum of codes 3821–3825</i>)

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section I — METAL CUTTING TYPE MACHINE TOOLS — Continued
		OTHER METAL CUTTING MACHINE TOOLS — Continued
3335129101	3840	Other metal cutting machine tools, n.e.c., valued under \$3,025
		Machines valued at \$3,025 each or more:
3335129106	3850	Broaching machines, including internal surface, and all other broaching machines
		Sawing and cutoff machines:
		Band saws:
3335129122	4181	Vertical
3335129123	4183	Horizontal
3335129126	4196	All other sawing and cutoff machines, including contour sawing and filing
3335129131	4619	Spark erosion, ultrasonic and electrolytic machines
3335129136	4630	Miscellaneous metal cutting machine tools, including rifling, centering, key-seating, pointing, chamfering, facing, shaving, grooving, countersinking, skiving, reaming, screw and nut slotting machines, threading, planers, shapers, and laser cutting machines
XXX	4691	Total other metal cutting machine tools (except station type and machining centers) (<i>Sum of item codes 3840–4630</i>)
3335126111	4700	REMANUFACTURED METAL CUTTING MACHINE TOOLS

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section II — METAL FORMING TYPE MACHINE TOOLS
		PUNCHING AND SHEARING MACHINES:
3335131101	5009	All punching and shearing machines valued under \$3,025 each Machines valued at \$3,025 each or more POWER OPERATED ONLY:
3335131106	5019	Punches, including combination punching and shearing machines
3335131111	5025	Punching machines fixed position and two axes positioning table
		Plate shearing machines (squaring, slitting, etc.):
3335131116	5031	Mechanical
3335131121	5032	Hydraulic
3335131126	5085	Other power-operated punching and shearing machines
		BENDING AND FORMING MACHINES — Power operated
3335131131	5109	All bending and forming machines valued under \$3,025 each Machines valued at \$3,025 each or more:
3335131136	5112	Press brakes
3335131142	5117	Roll bending machines, including sheet, plate, angles, bars, shapes, and tubes
3335131151	5220	Rotary bending and forming machines, including rotary head
3335131161	5270	Other bending and forming machines, including folders and slide bending machines
XXX	5291	Total punching, shearing, bending, and forming machines (<i>Sum of item codes 5009–5270</i>)
		PRESSES (except forging presses and die stamping presses)
3335133101	5409	All presses valued under \$3,025 each Machines valued at \$3,025 each or more MECHANICAL PRESSES:
		Gap or C-frame:
3335133106	5420	50 tons and under
3335133113	5432	Over 50 tons

REFERENCE LIST — Continued

FORM MQ333W		
Product code	Item code	Item description
		Section II – METAL FORMING TYPE MACHINE TOOLS — Continued
		MECHANICAL PRESSES — Continued
		Vertical straight sided and arch frame. Exclude knuckle joint - include cam and crank:
		Single action:
3335133121	5460	Single point
		Two point:
3335133128	5535	150 tons and under
3335133133	5565	Over 150 tons
3335133136	5830	Automatic presses, strip or coil fed
3335133141	5861	Other mechanical presses, including end wheel type, bulldozer, double and triple action, and transfer fed presses, four point and knuckle joint; excluding automated lines of standard equipment
		HYDRAULIC PRESSES (metalworking only):
		Vertical single action, all tonnages:
3335133146	5961	Housing or straight side type
3335133151	5962	Column type (open rod)
		Gap or C-frame:
3335133156	6131	15 tons and under
3335133161	6132	16 tons to 35 tons
3335133166	6133	Over 35 tons
3335133171	6305	Other hydraulic and pneumatic presses, including horizontal
XXX	6321	Total presses (except forging) (<i>Sum of item codes 5409–6305</i>)
3335135176	6405	Forging machines, including forging presses and die stamping presses
		ALL OTHER METAL FORMING TYPE MACHINE TOOLS
3335135101	6540	All other metal forming type machine tools valued under \$3,025 each

REFERENCE LIST — Continued

FORM **MQ333W**

Product code	Item code	Item description
		Section II – METAL FORMING TYPE MACHINE TOOLS — Continued
		Machines valued at \$3,025 each or more:
3335135106	6610	Thread rolling machinery
3335135111	6615	Metal container-making machinery
3335135116	6620	Die casting machines
3335135121	6779	Riveting machines (except hand held portable types)
3335135126	7173	All other metal forming type machine tools, n.e.c.
XXX	7191	Total all other metal forming type machine tools (<i>Sum of item codes 6540–7173</i>)
3335137121	7200	REMANUFACTURED METAL FORMING MACHINE TOOLS

NOTES: